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October 21, 2019

Via ECFS

Ms. Marlene Dortch
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: Notice of *Ex Parte,* PS Docket No. 07-114

Dear Ms. Dortch,

Pursuant to Section 1.1206 of the Commission's rules, 47 C.F.R. § 1.1206, this letter provides notice that on October 21, 2019, Charles H. Simon, Jr., Founder and CEO, Precision Broadband LLC ("PBB"), spoke by phone with Zenji Nakazawa, Public Safety and Consumer Protection Advisor to Chairman Pai.

We discussed various points, including those made in our filed Comments and Reply Comments to the 2019 *Fourth Further Notice of Proposed Rulemaking (Fourth FNPRM)*, PS Docket No. 07-114.[1]

First, the three milestones to be implemented within three years of the 2015 Fourth Report and Order (Fourth R&O):[2]

1. *Provide a status of the NEAD for dispatchable location to assess if it is "on track".*
   - The record indicates that the NEAD is not "on track."

2. *Implement a test-bed to evaluate barometric pressure (BP) sensor-based altitude (z-axis) technologies.*
   - Based on the 911 Location Test Bed, LLC Report filed in 2018 by the CTIA, the test-bed indicated that the technology provided statistically accurate measurements in controlled environments. However, the CTIA's cover letter also noted the limitations of such tests and expressed concerns about how the technology will perform in real-world deployments.[3]

3. *Wireless carriers must begin providing uncompensated BP measurements with 911 calls to PSAPs starting August 3, 2018.*
   - After 14 months of BP data collection, we would have expected that at least one or more PSAPs would be trying to use this live BP data to test real-world applications. For example, couldn't altitude estimates be calculated by subjecting the uncompensated BP measurements to the same compensation algorithms employed

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[1] Comments of Precision Broadband LLC, PS Docket No. 07-114 (filed May 20, 2019), *available at:* https://ecfsapi.fcc.gov/file/1052037980575/Precision%20Broadband%20Comments-PS%2007-114%202019-5-20%20.pdf. Reply Comments of Precision Broadband LLC, PS Docket No. 07-114 (filed June 7, 2019), *available at:* https://ecfsapi.fcc.gov/file/10607227049000/Precision%20Broadband%20Reply%20Comments-PS%2007-114%202019-6-7-Final%20.pdf

[2] *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, (February 3, 2015) [Hereinafter, *Fourth R&O*]

[3] See cover letter from CTIA to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 [filed Aug 3, 2018], *available at:* https://ecfsapi.fcc.gov/file/10803074728956/Cover%20Letter%20for%20Stage%20Z%20Report%20and%20Metric.pdf and 911 Location Test Bed, LLC Report on Stage Z *available at*: https://ecfsapi.fcc.gov/file/10803074728956/911-Location-Test-Bed-Stage-Z-Report-Final.pdf (Last visited Oct 21, 2019)

in the "test-bed"? Those altitude estimates could then be used in either active emergencies or in postmortem studies to compare the BP-derived altitudes against where the 911 callers were actually calling from. This would provide true experience data based on actual live calls from a mixture of: (1) phones in varying states and conditions; (2) responder locating devices and BP applications; (3) building structures; (4) environmental conditions; and (5) weather. The field results could then be compared to the controlled "test-bed" studies. We have not seen any such analysis provided in the record. We believe this is an important step and therefore, recommend that such field pilots and analyses with live data be performed before committing to a nationwide implementation of BP sensor-based z-axis technologies.

These milestones should be used to ensure that both progress is being made and to sanity check the assumptions upon which the original timelines were set. If the original assumptions are proven to be sound by following this step-by-step process, then staying the course is warranted. If at any step, however, some assumptions have not been validated, or some are even deemed to be "off track", then wouldn't a course correction be in order?

Second, some commenters that are urging the Commission to adopt the 3-meter z-axis metric suggest that there are no alternatives to the NEAD for dispatchable location.[4] Precision Broadband has in fact proposed an alternative dispatchable location solution - the Fixed Broadband 911 Location System (FB911). We will be presenting the FB911 system to the ATIS Emergency Services Interconnection Forum (ESIF) for consideration this November.

Third, in our Reply Comments to the Fourth FNPRM we advocated for "a multi-faceted, holistic approach to solving the vertical location problem," adding, "the wireless carriers alone cannot provide a comprehensive solution for dispatchable location." The FB911 system relies on interfaces with Internet Service Providers (ISPs) for dispatchable location. Both the FB911 system and the BP-derived z-axis positioning systems (Polaris and NextNav) are reliant on Apple and Google to implement additional client software in the device operating systems or firmware. Since ISPs, Google, and Apple are essentially dominant providers of "lifeline" communications services and technologies, we ask that the Commission include these parties as part of the rules.

Lastly, I reiterated our recommendations to change the vertical location rule from requiring either a dispatchable location or z-axis metric to requiring both data points with 911 calls from multi-story buildings. We further recommended that the definition of dispatchable location in the Fourth R&O be changed from specifying criteria for just the NEAD to be more inclusive of alternative dispatchable location sources. Many commenters have expressed concerns that the BP-based z-axis measurement has limited actionable value where the "rubber meets the road" (i.e., PSAPs and first-responders). Even NextNav acknowledged the limitations of z-axis data. NextNav explained that "it is not currently possible to convert a highly accurate "floor level" vertical altitude measurement into the corresponding "floor number" of a building [because] … there is no uniformity in the height of each floor level in different buildings… Second, regardless of the precision of the vertical location information, the current requirement of a horizontal location fix within 50 meters does not provide sufficient accuracy to reliably place a wireless caller in a particular building. Thus, the conversion of vertical altitude into a floor number could inadvertently place a wireless caller in the wrong building,

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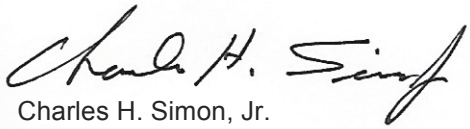
[4] See ex-parte letter from Venable LLP on behalf of Polaris Wireless, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 Page 2 [filed September 19, 2019], *available at* https://ecfsapi.fcc.gov/file/10919286605322/Polaris%20Wireless%20Ex%20Parte%209.19.2019.pdf and ex-parte letter from The International Association of Fire Fighters to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 Page 2 [filed September 13, 2019], *available at* https://ecfsapi.fcc.gov/file/1091662548368/IAFF%20Comment%20to%20FCC%20Commissioner%20Rosenworcel%209-12-19%20FINAL.pdf (Last visited October 21, 2019)

inhibiting rather than helping emergency response efforts."[5] It should be noted that in most residential situations, the FB911 system would provide the true dispatchable location (i.e., the right address, building, floor and unit), which would supplement the z-axis data for a current emergency and provide historical data to be used for future incidents.

In his comments to the 2015 Fourth R&O, then Commissioner Pai stated that "I am pleased ...[we] are now adopting requirements that meet those two watchwords [aggressive *and* achievable]... I am also glad that the framework we're putting in place puts us on a path to providing emergency responders with a "dispatchable location"—that's the room, office, or suite number where the 911 caller is located."[6] We believe that the solutions described herein for dispatchable location (FB911) and z-axis are independently achievable within an aggressive time frame. Together, they are also ***actionable***.

Respectfully submitted,



Charles H. Simon, Jr.
Founder and Chief Executive Officer

cc: Zenji Nakazawa

[5] See ex-parte letter from Jones Day on behalf of NextNav, to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 Page 1 [filed July 30, 2019], *available at:* https://ecfsapi.fcc.gov/file/1073005789169/NextNav%20-%20Ex%20Parte%20Notice%20with%20staff%20on%20Z%20Axis%20NPRM%207%2030%202019%20final.pdf. (Last visited Oct. 21, 2019).

[6] Statement Of Commissioner Ajit Pai, Re: Wireless E911 Location Accuracy Requirements, PS Docket No. 07-114, [February 3, 2015], *available at*: https://ecfsapi.fcc.gov/file/60001025929.pdf. (Last visited Oct. 21, 2019).